Classroom Discipline Across Forty-One Countries: School, Economic, and Cultural Differences

Ming Ming Chiu¹ and Bonnie Wing Yin Chow²

Abstract
This study examined classroom discipline and its determinants through multilevel analyses of 107,975 students in 7,259 schools from 41 countries. In schools with proportionately more girls, better school discipline, higher achieving students, more teacher support, or better teacher-student relations, students reported better classroom discipline. Countries’ economies and cultural values were linked to reported classroom discipline. In countries that were poorer, more equal, or had more rigid gender roles, students reported higher classroom discipline. Moreover, school variables’ links to classroom discipline differed across countries. Specifically, in richer countries, teacher support and teacher-student relations had stronger, positive links to reported classroom discipline. In more equal countries, students’ mathematics achievement had stronger, positive links to reported classroom discipline. Moderation effects of cultural values were also explored.

Keywords
Student behavior, Discipline, Teacher student relationship, Cultural values, Academic achievement

Effective classroom discipline promotes students’ learning and responsibility by facilitating quality instruction and helping students internalize self-discipline. Disruptive student behaviors interfere with teacher instruction and student learning by wasting instructional time on order and control (e.g., Infantino & Little, 2005), by creating an anxious classroom atmosphere (e.g., Bacon, 1990), and by raising teacher stress (e.g., Borg, Riding, & Falzon, 1991). By minimizing disruptive behaviors and encouraging responsible behaviors, effective classroom discipline not only allows teachers to provide quality instruction and enhance their psychological well-being (Borg et al., 1991), but also promotes students’ sense of responsibility, academic achievement, and positive behavioral outcomes (e.g., Ma & Willms, 2004).

Though the benefits of effective classroom discipline are well-documented (e.g., Ma & Willms, 2004), whether classroom discipline or its antecedents are universal or differ across countries

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remain open questions. Few studies have examined these issues. Notably, Lewis, Romi, Qui, and Katz (2005) found that compared to Israeli or Australian teachers, Chinese teachers were more inclusive, more supportive, less punitive, and less aggressive, resulting in fewer classroom misbehaviors.

Thus, this study investigated how country characteristics (country income, inequality, and cultural values) and school characteristics might be linked to 15-year-olds’ reported classroom discipline in 41 countries (controlling for family and student variables). Using advanced statistical methods, this study extended past research by showing how country properties were linked to classroom discipline and how they moderated school and teacher characteristics’ links to classroom discipline. As a result, these findings can inform practical strategies to foster better disciplined classrooms.

Classroom Discipline Across Schools and Countries

Discipline in the context of a classroom is defined as student misbehaviors and teachers’ actions to enhance students’ appropriate behaviors during class (Charles, 2002). Hence, a school’s students and teachers likely affect classroom discipline. Country characteristics might also affect classroom discipline or moderate its links with other school characteristics.

School. A school’s student composition and teacher characteristics might affect classroom discipline (see Figure 1). The school context, particularly gender composition, school discipline, and student achievement, contributes to effective classroom discipline. As girls commit fewer misbehaviors in class than boys (Lewis, 2001; Skiba, Michael, Nardo, & Peterson, 2002), students in schools with more girls likely have more positive models of well-disciplined students. Furthermore, schools with proportionately more girls and thereby fewer misbehaviors might be more likely to establish a classroom culture of effective discipline. The disciplinary culture of a school includes school rules and norms that can influence classroom rules and norms and thereby affect classroom discipline (Ma & Willms, 2004).

Schools with more high-achieving students might also show better classroom discipline through a better disciplined culture or through better individual behavior (see Figure 1). Schools with more high-achieving students often have high-achieving school and classroom cultures, which are consonant with well-disciplined classroom cultures (Hawkins & Lishner, 1987; Lewis, 2001; Ma & Willms, 2004). Also, high-achieving students might understand teachers’ instructions and expectations more clearly, so they commit fewer classroom misbehaviors (Rowe & Rowe, 1999).

Hypothesis 1: Schools with proportionately more girls, better school discipline, or higher student achievement have better classroom discipline.

Better teacher-student relations and greater teacher support can also improve classroom discipline (Ma & Willms, 2004; see Figure 1). Specifically, teachers who help and praise students show their care and concern for them, so these students often reciprocate this concern and respect for the teacher by adhering to classroom norms (Houghton, Wheldall, Jukes, & Sharpe, 1990). When teachers shout at students, blame them, or aggressively discipline them, these students often show more classroom misbehaviors (Miller, Ferguson, & Byrne, 2000).

Hypothesis 2: Schools with better teacher-student relations or greater teacher support have better classroom discipline.
Country. Countries’ economic characteristics and cultural values might directly influence classroom discipline (see Figure 1). Furthermore, few studies have examined whether the mechanisms underlying classroom discipline differ across countries.

The link between country wealth and classroom discipline is unclear. Richer countries have more education resources (Chiu, Chow, & McBride-Chang, 2007). Thus, teachers might have better classroom management training or more classroom management resources (e.g., personal laptops or school computers), which they can use to improve classroom discipline. In richer countries, parents often are richer, are more educated, and have fewer children (Chiu & Zeng, 2008). Hence children in richer countries often spend more time with their parents due to fewer competing siblings, less parent time on housework, and multitasking parents (e.g., United States; Sandberg & Hoffert, 2001). Thus, these parents have more time per child to teach him or her better social skills and self-discipline (Chiu, 2007; Downey, 2001). For these reasons, students in richer countries might show better classroom discipline.

On the other hand, poorer countries show tighter education-income links, which might motivate students more and yield better classroom discipline. Compared to richer countries, academic success in poorer countries is more tightly linked to higher wages (especially if unions are weak; Blau & Kahn, 2005). Thus, in poorer countries, more students view schooling as valuable and have greater academic motivation (Furnham, Kirkcaldy, & Lynn, 1996). Hence, they are more likely to listen to their teachers, heed teacher instructions, and follow classroom norms, contributing to better classroom discipline.

Hypothesis 3a: Richer countries have better classroom discipline. versus

Hypothesis 3b: Poorer countries have better classroom discipline.

Country wealth might also moderate school effects. In richer countries, parents often have more schooling and spend more time with their children, so they can teach them better social skills and self-discipline (Chiu & Klassen, 2009; Sandberg & Hoffert, 2001). In contrast, parents in poorer countries have less schooling and spend less time with their children, so they might rely more on teachers and school staff to teach their children appropriate classroom discipline.

Figure 1. A Conceptual Model of How Country and School Variables Might Influence Classroom Discipline

Control variables are not included in this figure (e.g., family socioeconomic status).
Also, school resources (e.g., teacher certification, computers, books) vary far more widely across schools in poorer countries (especially schools in Latin American countries; Gamoran & Long, 2006), which might yield greater differences in classroom discipline across schools. As a result, in richer countries, family influences on student discipline might be stronger while school influences on classroom discipline might be weaker.

On the other hand, students in poorer countries might be more self-motivated and more self-disciplined (Dekker & Fischer, 2008; Furnham et al., 1996). As a result, their classroom discipline might be less sensitive to external motivation (e.g., school rewards, teacher support, or student-teacher relationships). Hence, richer countries might show stronger teacher effects on classroom discipline.

Hypothesis 4a: In richer countries, school resources (such as teachers) have stronger effects on classroom discipline.

versus

Hypothesis 4b: In richer countries, school resources (such as teachers) have weaker effects on classroom discipline.

Countries differ not only by income and its distribution but also by their cultural values. Consider four basic societal issues: (a) inducing responsible individual behavior to maintain the fabric of a society, (b) prioritizing the interests of individuals versus groups, (c) the roles of men and women, and (d) attitudes toward risk and change (Hofstede, 2003). To encourage responsible behavior, a society might assign hierarchical roles and teach its citizens to obey authority (hierarchical; e.g., Russia), or citizens might learn to view, value, and act toward one another as equals based on their common humanity (egalitarian; e.g., Sweden). Likewise, a society may favor group interests (collectivist; e.g., Hong Kong) or individual interests (individualist; e.g., New Zealand). Societies might have rigidly defined gender roles (e.g., Austria, versus gender egalitarian, e.g., Denmark) or avoid uncertainty (e.g., Portugal, versus tolerate uncertainty, e.g., Ireland). Although these cultural values differ somewhat within countries, most of the differences occur across countries, as cultural values are linked more strongly to one’s country than to religion, employer organization, or individual personality (Hofstede, Neuijen, Ohayv, & Sanders, 1990; Inglehart & Baker, 2000).

Cultural values shape people’s behaviors toward one another, so they might influence students’ behaviors in school (see Figure 1). In countries with more hierarchical cultures, students likely accept and respect the authority and dominant role of the teacher more easily (Smith & Bond, 1999). Thus, these students are more likely to obey the rules of the teacher and of the school to behave well in class.

Hypothesis 5: In more hierarchical cultures, students show better classroom discipline.

Meanwhile, students in collectivist cultures might be more concerned with and sensitive to one another and to their teacher, for example, because of concerns about public self-image or face (P. Brown & Levinson, 1987). When students disobey a teacher, the teacher can punish the students, thereby making them lose face (Chiu & Khoo, 2003). As loss of face is more damaging in collective cultures than in individualistic cultures (Hofstede, 2003), teachers (and schoolmates) can use this method to increase classroom discipline more effectively in collectivist cultures. Thus, these students might be more likely to behave themselves, yielding better classroom discipline.

Hypothesis 6: In more collectivist cultures, students show better classroom discipline.
Societies with more rigidly defined gender roles have clearer gender role expectations (Hofstede, 2003). In these societies, students have gendered-role expectations of teachers and prefer female teachers, specifically female teachers who exhibit traditional maternal behaviors (e.g., Mallam, 1993). As men and women are more likely to fill traditional gender roles (specifically teachers) in these societies, students might have better understandings and expectations of their teachers’ behaviors and their own behaviors in school, which facilitates acceptance of school and teacher authority (Henze, Katz, & Norte, 2000). These students might then be more likely to adhere to school and classroom rules and behave well in class (Arum, 2003).

**Hypothesis 7**: In less gender egalitarian countries, students show better classroom discipline.

In countries that tend to avoid uncertainty, students tend to avoid risky behavior, such as disobeying rules (Hofstede, 2003). As students in uncertainty avoidance cultures are more likely to obey rules, students in these countries might have fewer disciplinary problems, contributing to better classroom discipline.

**Hypothesis 8**: In countries with greater uncertainty avoidance, students show better classroom discipline.

The Present Study

This study examines how country properties (country income, inequality, and cultural values), school properties, and student academic variables might affect classroom discipline. In particular, we test 8 sets of hypotheses regarding the links between these properties and classroom discipline (see Figure 1).

To understand their unique contributions to classroom discipline, we controlled for family and other student variables in the analyses. We included country inequality (GDP Gini; Chiu & Khoo, 2005), family structure (parents, grandparents, siblings; Edwards, 2004), socioeconomic status (SES; Miller et al., 2000), and family cultural and social involvement (cultural activities, cultural possessions, social communication; Sheldon & Epstein, 2002). Although other cultural values were tested, they were not significant (and several were highly correlated with the cultural values discussed above), so they were not discussed due to space limitations (short-term orientation, harmony, embeddedness, hierarchy, mastery, affective autonomy, intellectual autonomy, egalitarianism, secular-rational orientations toward authority, self-expression values, external dynamism, and social cynicism; Bond et al., 2004; Hofstede, 2003; Inglehart, Basanez, Diez-Medrano, Halman, & Luijkkx, 2004; Smith, Peterson, & Schwartz, 2002).

Method

The data and methodology in this study overlapped with other studies (e.g., Chiu, in press; Chiu & Klassen, in press), but the outcome variables differed (classroom discipline in this study, rather than student achievement).

The Organization for Economic Cooperation and Development’s Program for International Student Assessment (OECD-PISA) assessed 15-year-olds’ mathematics achievement and asked students and principals to fill out questionnaires voluntarily in 41 countries (see list of countries in Table 2). International experts from participating OECD and non-OECD countries defined classroom discipline, mathematics literacy, and other theoretical constructs; built assessment frameworks; created test items, forward-translated and backward-translated them; and pilot-tested them to check their validity and reliability (for details and sample items, see OECD, 2002, and
Participating students completed a 2-hour assessment booklet and then a 30- to 40-minute questionnaire. We also used the following country-level data sets: economic data from OECD (2000) and cultural values data (House, Hanges, Javidan, Dorfman, & Gupta, 2004). As many of these participating countries were in the OECD, they were generally wealthier than most countries. All variables were created from the student questionnaire except for country-level economic values (OECD, 2000), cultural values (House et al., 2004), school discipline, and school resources (both were created from principals’ questionnaire responses).

**Design**

Investigating these research questions across many countries and schools requires representative sampling, precise tests and questionnaires, and suitable statistical models. In each country, OECD (2002) chose 150 representative schools based on neighborhood SES and student intake and sampled 35 fifteen-year-olds from each school (stratified sampling). If a school’s principal or more than 20% of its selected students did not participate, a replacement school based on neighborhood SES and student intake was selected. Students who could not physically take the exam, were mentally retarded, or had studied the test language for less than a year were excluded from the test (subject to maximums of 0.5%, 2%, and 2.5%, respectively, of the student sample from each school; otherwise, the school was replaced in the sample). Overall, less than 1% of schools were excluded and less than 5% of students were excluded. Using suitable weights, OECD (2002) created representative samples of each country’s schools and 15-year-old students.

To reduce student fatigue and test-learning effects, OECD (2002) gave these students mathematics achievement subtests (overlapping subsets of all multiple choice and open-ended questions) via a balanced incomplete block (BIB) test design (Baker & Kim, 2004). OECD (2002) fitted the data with a graded response Rasch model to estimate each test item’s difficulty and each student’s test score.

OECD’s (2002) questionnaire reduced measurement error by using multiple measures for each construct. Also, the multigroup Rasch models computed for each item in each country showed similar parameters, suggesting measurement equivalence across countries (May, 2006). (Unlike confirmatory factor analysis, a multigroup Rasch model requires only one invariant anchor item across countries’ and models’ heterogeneous use of the ordinal rating scale; Rossi, Gilula, & Allenby, 2001). Other studies also showed consistent responses to these construct’s questionnaire items and similar participant understandings across countries (G. Brown, Micklewright, Schnepf, & Waldmann, [2007]; OECD, 2002).

As noted above, cultural values differ mostly across countries, not within countries, as cultural values are linked more strongly to one’s nation than to age, religion, employer organization, or individual personality (Hofstede et al., 1990; Inglehart & Baker, 2000; Schwartz & Ros, 1995). The similar ratings of cultural values across different sources further support the validity of using an external data source (Hofstede, 2003; Inglehart & Baker, 2000; Schwartz & Ros, 1995; Smith & Bond, 1999).

Multilevel analysis of plausible values yields more precise standard errors than does ordinary least squares (Goldstein, 1995; Rust & Rao, 1996). Meanwhile missing questionnaire response data (4%) can reduce estimation efficiency, complicate data analyses, and bias results; Markov Chain Monte Carlo multiple imputation addresses these problems more effectively than deletion, mean substitution, or simple imputation (Peugh & Enders, 2004). The Little (1988) analysis result ($p = .87$) suggests that the data were missing completely at random (MCAR). (A true MCAR test requiring follow-up interviews of respondents was too costly).
Variables

Classroom discipline and five sets of variables were tested. See Table 1 for summary statistics, including reliabilities.

Reported classroom discipline is an inverted index of student responses regarding how often “the teacher has to wait a long time for students to quiet down,” “students cannot work well,” “students don’t listen to what the teacher says,” “student don’t start working for a long time after the lesson begins,” and “there is noise and disorder.” Choices were never, some lessons, most lessons, and every lesson.

Country variables. Richer countries have higher GDP per capita, while less equal countries have higher Gini (data from OECD, 2000). Power distance, in-group collectivism, gender egalitarianism, and uncertainty avoidance are cultural value indices created by House et al. (2004) based on questionnaire data from 61 countries. Power distance indicates how much respondents value hierarchy rather than egalitarianism. In-group collectivism indicates how much respondents value collectivism rather than individualism. Gender egalitarianism indicates how much respondents value flexible gender roles rather than rigid gender roles. Uncertainty avoidance indicates how much respondents value certainty rather than risk.

### Table 1. Summary Statistics of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom discipline</td>
<td>0.04</td>
<td>0.99</td>
<td>-2.96</td>
<td>2.92</td>
<td>0.81</td>
</tr>
<tr>
<td>Country</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log GDP per capita</td>
<td>9.09</td>
<td>0.60</td>
<td>7.63</td>
<td>9.88</td>
<td></td>
</tr>
<tr>
<td>GDP GINI</td>
<td>35.17</td>
<td>8.43</td>
<td>24.4</td>
<td>59.1</td>
<td></td>
</tr>
<tr>
<td>Gender egalitarianism</td>
<td>4.68</td>
<td>0.36</td>
<td>3.89</td>
<td>5.17</td>
<td>0.88</td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family SES</td>
<td>-0.05</td>
<td>1.04</td>
<td>-3.58</td>
<td>2.37</td>
<td></td>
</tr>
<tr>
<td>Single parent</td>
<td>0.14</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blended family</td>
<td>0.06</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living with no parents</td>
<td>0.04</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural activities</td>
<td>0.03</td>
<td>0.99</td>
<td>-1.79</td>
<td>2.93</td>
<td>0.63</td>
</tr>
<tr>
<td>Cultural possessions</td>
<td>0.01</td>
<td>0.98</td>
<td>-1.65</td>
<td>1.16</td>
<td>0.59</td>
</tr>
<tr>
<td>Social communication</td>
<td>0.02</td>
<td>1.02</td>
<td>-3.65</td>
<td>1.20</td>
<td>0.58</td>
</tr>
<tr>
<td>School</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School discipline</td>
<td>0.02</td>
<td>1.08</td>
<td>-3.71</td>
<td>2.61</td>
<td>0.81</td>
</tr>
<tr>
<td>% of Girls in school</td>
<td>0.51</td>
<td>0.23</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>School mean of Mathematics</td>
<td>468</td>
<td>88</td>
<td>144</td>
<td>717</td>
<td></td>
</tr>
<tr>
<td>achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School mean of Teacher support</td>
<td>0.04</td>
<td>0.43</td>
<td>-3.03</td>
<td>1.95</td>
<td></td>
</tr>
<tr>
<td>School mean of Teacher-student relations</td>
<td>0.11</td>
<td>0.44</td>
<td>-2.90</td>
<td>2.84</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher support</td>
<td>0.04</td>
<td>0.96</td>
<td>-3.03</td>
<td>1.95</td>
<td>0.87</td>
</tr>
<tr>
<td>Teacher-student relations</td>
<td>0.11</td>
<td>1.02</td>
<td>-2.90</td>
<td>2.84</td>
<td>0.79</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girl</td>
<td>0.51</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics Test Score</td>
<td>469</td>
<td>116</td>
<td>109</td>
<td>864</td>
<td></td>
</tr>
</tbody>
</table>

Note: All data are from PISA, unless otherwise noted. OECD (2002) created Warm (1989) indices and tested them for reliability. PISA indices were initially standardized (m = 0; SD = 1) for OECD countries. Negative means indicate lower values for non-OECD countries, which were added later.
Family variables. Family SES was the standardized, congeneric factor score of highest parent job status (Ganzeboom, de Graaf, & Treiman, 1992), mother’s years of schooling, and father’s years of schooling. Single parent, blended family, and living with no parents indicate a student’s family structure. Blended family refers to a student living with one birth parent and one step-parent. Cultural activities is an index of how often a student “visited a museum or art gallery,” “attended opera, ballet or classical symphony concert,” or “watched live theatre.” Choices were never or hardly ever, once or twice a year, three or four times a year, and more than four times a year. Cultural possession is an index of whether a student has the following items at home: classical literature, books of poetry, or works of art. Social communication is an index of how often a student and his or her family “discuss how well I am doing at school,” “eat the main meal together,” or “spend time simply talking.” Choices were never or hardly ever, a few times a year, about once a month, several times a month, and several times a week.

Teacher variables. Teacher support is an index of a student’s perception of how much his or her mathematics teacher “shows an interest in every student’s learning,” “gives students an opportunity to express opinions,” “helps students with their work,” “continues teaching until the students understand,” “does a lot to help students,” and “helps students with their learning.” Choices were never, some lessons, most lessons, and every lesson. Teacher-student relation is an index of a student’s perception of “how well he or she gets along with most teachers,” “most teachers are interested in students’ well-being,” “most of my teachers really listen to what I have to say,” “if I need extra help, I will receive it from my teachers,” and “most of my teachers treat me fairly.” Choices were strongly disagree, disagree, agree, and strongly agree.

Student variables. Student variables included gender and mathematics achievement, which were obtained from the OECD questionnaire responses and mathematics test performances, as discussed above.

School variables. School discipline is an inverted index of how often students’ learning was hindered by “student absenteeism,” “disruption of classes by students,” “students skipping classes,” “students lacking respect for teachers,” “the use of alcohol or illegal drugs,” and “students intimidating or bullying other students.” Choices were not at all, very little, to some extent, and a lot. Percentage of girls is the percentage of girls in a school. The school mean mathematics achievement, school mean teacher support, and school mean teacher-student relation were the respective means of mathematics achievement, teacher support, and teacher-student relation over all the representative students from a school.

Analysis

A variance components model tested if the variances were significant at each of the three levels. All continuous, independent variables were centered at their country means. The following analyses were done with MLn (Rasbash & Woodhouse, 1995).

\[ Y_{ijk} = \beta_{000} + e_{ijk} + f_{0jk} + g_{00k} \]  

(1)

\( \beta_{000} \) is the grand mean intercept of the reported classroom discipline, \( Y_{ijk} \), of student \( i \) in school \( j \) in country \( k \). Residuals at the student, school, and country levels are \( e_{ijk}, f_{0jk}, \) and \( g_{00k} \).

Explanatory variables were entered in sequential sets to estimate the variance explained by each set and potential multicollinearity across sets (Kennedy, 2004). Correlations among pairs of explanatory variables within a set were inspected for potential multicollinearity. Highly correlated variables were combined to create an index (e.g., SES). The three-level analyses involved five types of variables, including variables of country (country level), school and teacher (school level), and family and student (student level). Country variables might affect family variables, and a student’s family variables and schoolmate family variables might affect choice of schools.
All of these might affect student characteristics. Hence, we entered the variables in this order: country variables, family variables, school variables, teacher variables, and student variables (see Table 1). Nonsignificant variables were removed.

\[
Y_{ijk} = \beta_{000} + e_{ijk} + f_{0jk} + g_{0ok} + \beta_{00}T_{00k} + \beta_{0jk}U_{ijk} + \beta_{0nk}V_{0jk} + \beta_{njk}W_{ijk} + \beta_{xjk}X_{ijk} + \beta_{zjk}Z_{ijk} \tag{2}
\]

First, we entered a vector of \( t \) country-level variables: log GDP per capita, Gini (country inequality), individualism, egalitarianism, gender egalitarianism, and uncertainty avoidance (\( T \)). These analyses test Hypotheses 3, 5, 6, 7, and 8, whether classroom discipline is significant stronger in countries with specific economic characteristics or cultural values. We tested whether this set of predictors was significant with a nested hypothesis test (\( \chi^2 \) log likelihood; Kennedy, 2004).

Next, we added \( u \) family variables at the student level: first-generation immigrant, second-generation immigrant, foreign language spoken at home, SES, family structure (single parent, blended family, and living with no parents), living with grandparents, number of siblings, birth order, cultural possessions, cultural activities, cultural communication, social communication, and gender (\( U \)). We applied the procedure on \( T \) to \( U \).

Next, we tested if the \( v \) student-level regression coefficients (\( \beta_{vj} = \beta_{v00} + f_{vjk} + g_{v0k} \)) varied significantly at the country-level (\( g_{v0k} \neq 0? \); random effects; Goldstein, 1995). If so, we tested whether they depended on the above country characteristics (\( T \)). This part of the analysis tests whether the link between an independent variable and reported classroom discipline differs across countries and whether country-level variables can account for this difference.

The procedure for \( U \) was used for the following analyses. We added \( v \) school variables: school resources, school discipline, percentage of girls in school, school mean of mathematics achievement, school mean of teacher support, and school mean of teacher-student relations (\( V \)). The fixed part of this analysis tests Hypotheses 1 and 2, whether school and teacher variables are linked to classroom discipline. The random part of this analysis tests Hypothesis 4, whether the links between reported classroom discipline and the teacher or school variables differ across countries and whether the country-level variables can account for these differences.

Next, we added \( w \) teacher variables—teacher support and teacher-student relations (\( W \))—and then student variables—girl and mathematics achievement (\( X \)). Mathematics is a core subject with similar curricula across countries, unlike other subjects such as history or literature (Third International Mathematics and Science Study, 1995). Thus, we used mathematics achievement in this comparison of students across 41 countries. Then, we included country-level variable interactions with school and teacher variables (\( Z \)).

An alpha level of .05 was used. Testing many hypotheses increases the likelihood that at least one of them incorrectly rejects a null hypothesis (a false positive). We controlled for the false discovery rate (FDR) with Benjamini, Krieger, and Yekutieli’s (2006) two-stage linear step-up procedure, as computer simulations showed that it outperformed 13 other methods. FDR is the expectation of the proportion of rejected true null hypotheses among the rejected hypotheses. When the null hypothesis is false for some hypotheses, an FDR controlling procedure can reject many more such hypotheses at the expense of a small proportion of erroneous rejections.

For robustness, we did the following analyses: (a) same as above, but with standardized scores within each country; (b) two-level regressions (school and student levels) for each country with all within-country variables; (c) same as (b) but with standardized scores within each country; and (d) same as above but on two subsamples of the data with fewer Western European countries to be more representative of the world’s nations (the first subsample had half of the Western European countries, and the second subsample had the other half). The results were similar to those reported below.
Results

The countries ranged from poorer, more unequal, less gender egalitarian countries (such as Brazil) to richer, more equal, more gender egalitarian countries (such as Norway; see Table 2). Albania reported the highest mean classroom discipline (0.60) and had many characteristics that correlated with high classroom discipline: poor (low GDP per capita of $2,771), equal (low Gini of 31), low gender egalitarianism (4.19), high school discipline (0.56), proportionately more girls (52%), more teacher support (0.32), and better teacher-student relations (0.60).

Explanatory Model

School and country variables helped explain differences in students’ reported classroom discipline (see Table 3). The variance of reported classroom discipline was mostly among students within a school (86%), but the differences across schools (8%) and across countries (6%) were also significant. All results discussed below describe first entry into the regression, controlling for the effects of all previously included variables.

School and teacher characteristics. In schools with better school discipline, proportionately more girls in school, or higher school mathematics achievement, students reported better classroom discipline (supporting Hypothesis 1; see Table 3). Both school means and individual student perceptions of teacher support and of teacher-student relations were positively linked to reported classroom discipline (supporting Hypothesis 2). When school mean teacher support or school mean teacher-student relations was higher, reported student discipline was higher. Likewise, when teacher support or teacher-student relationship was greater, reported classroom discipline was better.

Differences across countries. Countries that were poorer, more equal, or had less gender egalitarian cultures had higher reported classroom discipline. In richer countries (as measured by GDP per capita), reported classroom discipline was lower (rejecting Hypothesis 3a; supporting Hypothesis 3b). In countries with higher Gini (more unequal), reported classroom discipline was lower. In societies with greater gender egalitarianism, reported classroom discipline was lower (supporting Hypothesis 7). Other cultural values were not significantly linked to reported classroom discipline (no support for Hypotheses 5, 6, or 8).

Moderation results. Countries’ economies and cultural values also moderated links between school characteristics and reported classroom discipline. In richer countries, the positive links of teacher support and teacher-student relationship with reported classroom discipline were stronger (rejecting Hypothesis 4a; supporting Hypothesis 4b). In more equal countries, the positive link between schoolmates’ mathematics achievement and reported classroom discipline was stronger. Meanwhile, the positive link between teacher-student relationship and reported classroom discipline was weaker in more gender egalitarian countries.

Altogether, the explanatory variables accounted for 25% of the differences among countries, 25% of the differences among schools, and 5% of the differences within each school, or 8% of the total variance (= 25% × country variance [6%] + 25% × school variance [8%] + 5% × student variance [86%]). Significant control variables included the following family variables: SES, single parent, blended family, living with no parents, cultural possessions, cultural activities, and social communication (see Table 3). Other variables were not significant. The above results did not significantly differ across schools within a country.

Discussion

Past studies have shown how effective classroom discipline facilitates quality instruction and promotes students’ learning, self-discipline, and sense of responsibility within a country. This study extends this research by (a) analyzing whether the antecedents of classroom discipline are...
<table>
<thead>
<tr>
<th>Country</th>
<th>Class Disciplinea</th>
<th>School Disciplinea</th>
<th>% Girls</th>
<th>Math Scoreb</th>
<th>Teacher Supportc</th>
<th>Teacher-Student Relationsa,c</th>
<th>GDP per Capitad</th>
<th>GDP Ginie</th>
<th>Gender Egalitariane</th>
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(continued)
Table 2. (continued)

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<tr>
<th>Country</th>
<th>Class Discipline</th>
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<th>% Girls</th>
<th>Math Score</th>
<th>Teacher Support</th>
<th>Teacher-Student Relations</th>
<th>GDP per Capita</th>
<th>GDP Gini</th>
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</table>

a. OECD $M = 0$, $SD = 1$. Negative values indicate country means below the OECD mean.
b. Gross Domestic Product per capita in U.S. dollars.
c. Larger numbers indicate greater inequality or more gender egalitarian cultural values.
d. Teacher-student relationship.
e. OECD $M = 500$, $SD = 100$. 
universal or differ across countries, (b) examining whether country-level variables might be
directly linked to students’ reported classroom discipline, and (c) testing whether country-level
variables can account for the differences in (a).

Consistent with past research, school and teacher characteristics were linked to reported class-
room discipline in most countries. Schools with better school discipline, proportionately more
girls, or higher achieving students reported better classroom discipline (Chiu & McBride-Chang,
2006; Lewis, 2001; Skiba et al., 2002). Also, schools with better teacher-student relations or
greater teacher support reported better classroom discipline in most countries (Lewis et al., 2005;
Miller et al., 2000). Furthermore, both reported classroom discipline and its links to school vari-
bles differed across countries.

**Country Differences**

Reported classroom discipline differed across countries with respect to their economies and cul-
tural values. Furthermore, these country characteristics moderated reported classroom discipline’s
links with school characteristics and with teacher characteristics.
Country Wealth

In poorer countries, reported classroom discipline was higher. This result rejects the claim that richer countries have better qualified teachers who orchestrate better classroom discipline. Unlike academic achievement, classroom discipline does not necessarily improve as a country’s economy grows. Instead, the result suggests the following interpretation. In poorer countries, schooling is more important to career success, so these students are more academically motivated (Furnham et al., 1996), attend more to teacher instructions, and show better classroom discipline.

In richer countries, perceived teacher support’s and teacher-student relations’ positive links with reported classroom discipline were stronger. This result rejects the claim that the greater resources of parents in richer countries weaken the impact of teachers on classroom discipline, in contrast to the results of academic achievement studies (Gamoran & Long, 2006; Heyneman & Loxley, 1983). Instead, this result contributes to the teacher research literature by showing the greater importance of teachers in richer countries for classroom discipline.

Cultural Values

This study extends the research on cultural values by showing its connection to reported classroom discipline. In less gender egalitarian cultures, reported classroom discipline was higher. This result is consistent with the view that students in less gender egalitarian cultures have clearer understandings of expected school behaviors, resulting in better classroom discipline. Hence, classroom discipline might require greater school and teacher attention in more gender egalitarian cultures. Other cultural values (hierarchical, collectivist, uncertainty avoidance) were not significantly linked to reported classroom discipline.

Research and Policy Implications

This study extends past research on academic achievement to investigate how country-level factors influence classroom discipline, a major local schooling issue. If findings of this study are replicated in future studies, they highlight the relationships between country-level factors and local schooling issues such as classroom discipline as key foci for research and policy. This study demonstrated links between country-level factors and classroom discipline, yielding several implications.

First, while student achievement is often higher in richer countries, country wealth alone does not benefit all aspects of schooling, as this study shows weaker classroom discipline in richer countries. This negative link opens new avenues of research, raising the possibility that other psychosocial aspects of schooling (e.g., social relationships, sense of belonging at school) might be worse (or better) in richer countries. The negative link to classroom discipline suggests that classroom discipline might require more attention and educational resources in richer countries than in poorer ones. The stronger influence of teacher behaviors on reported classroom discipline in richer countries suggests that greater attention to them can improve student discipline. Possible areas of focus include teacher selection and/or preparation. Future studies can examine the precise mechanisms that account for this result.

Second, country inequality’s negative link to classroom discipline and its moderation of the link between achievement and classroom discipline shows the importance of distribution of resources in the psychosocial realm as well as the economic realm. It suggests that more attention on the classroom discipline issue is needed in countries with greater inequality.

Lastly, gender egalitarianism is linked to classroom discipline and moderates its link with teacher-student relationship, showing the potential impact of cultural values on students’ schooling behaviors. Moreover, this result suggests that reliance on the teacher-student relationship to maintain classroom discipline is more successful in traditional cultures but less so in
societies with greater gender egalitarianism. The latter societies might look to other means (such as discipline systems within schools) to support individual teacher efforts to maintain classroom discipline. Overall, these results highlight the need to adapt educational interventions to the local conditions of the classroom within the society.

Limitations and Future Research

This study had several limitations that can be addressed by future research: representation, classroom behaviors, correlational study, counterbalancing, hierarchical item response theory (IRT), and other control variables. First, the students sampled were not fully representative of all 15-year-olds; many of the countries in this data set were relatively wealthy, missing many countries from Africa. Also, students with very low achievement levels or very poor children might not attend school (e.g., UNICEF, 2001). Hence, a more representative sample of countries might yield different results; for example, a sample with more poor countries might show significant interaction effects with country GDP per capita (cf., Gamoran & Long, 2006).

Second, actual classroom behaviors (e.g., videotape) are preferable to reported classroom discipline. Third, this correlational study does not warrant causal interpretations, which future studies can address with longitudinal designs. Fourth, these data were vulnerable to acquiescence response set or position preference, which future studies can address by inverting some questionnaire items assessing the same construct. Fifth, future large-scale studies can benefit from hierarchical IRT, which can model the cross-country measurement variance(s) in an item’s parameter(s) to make substantive comparisons (De Jong, Steenkamp, & Fox, 2007). Also, the absence of other possibly relevant variables might result in omitted variable bias. For example, cultural values are similar among citizens within a country compared to those in other countries, but the cultural values of individual students might still differ sufficiently to affect their behaviors. Thus, future studies can also collect individual students’ cultural values.

Conclusion

This study of students’ reported classroom discipline in 41 countries highlights the importance of classroom, school, and country contexts. Although the results showed several common links across many countries, other links showed distinct country differences. Teacher and schoolmate characteristics were linked to reported classroom discipline in most countries. However, reported classroom discipline differed across countries with respect to their economies and cultural values. Furthermore, reported classroom discipline’s relationships with school and teacher variables also differed across countries. Together, these results suggest that educational leaders can benefit from attending to school and country differences when designing policies to enhance classroom discipline.

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